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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,869	02/02/2006	Takashi Nagai	39627	2228

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EXAMINER

DIAZ, THOMAS C

ART UNIT	PAPER NUMBER
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4171

NOTIFICATION DATE	DELIVERY MODE
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07/22/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/566,869	Applicant(s) NAGAI ET AL.	
	Examiner Thomas Diaz	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because figures 2 and 3 should be labeled with the label -prior art-. Examiner recommends changing the label from related art to prior art for consistency with the MPEP. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations

“continuous-curved C shape” and “a thickness of said C-shaped first arm” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

5. In claims 1 and 3 the applicant claims “the first arm having a continuous-curved C shape, wherein a thickness of said C-shaped first arm...” The applicant does not provide any literal support in the specification for “continuous-curved C shape” and “a thickness of said C-shaped first arm”. There is no clear indication of where this matter is supported and how the terminology is defined. On page 3 line 25 of the specification the applicant states that “the first arm is formed in a shape curved in a direction of rotation with respect to the swing part”. There is no mention that it is a continuous-curved shape nor any way the examiner can precisely interpret what the applicant means. Furthermore, no thickness of said first arm is defined in the specification.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 1 and 3 recite the limitation "the first drive part". There is insufficient antecedent basis for this limitation in the claim. Is the applicant referring to the swing part or another component? For purpose of examination the examiner takes the position that the applicant is referring to the swing part.

Additionally, claims 1 and 3 also recite "a thickness of said C-shaped first arm..." The applicant has not established a proper frame of reference for determining or measuring this thickness. It is unclear what thickness the applicant is referring to. What is the "thickness of said C-shaped first arm". It is unclear what this phrase means. As written the claim is unclear.

Furthermore, claims 1 and 3 recite "the first arm having a continuous-curved C shape". It is unclear what the applicant means by "continuous-curved". The arm is continuous from what point to what point? Is the applicant referring to the radius of curvature? As written the claim is unclear.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

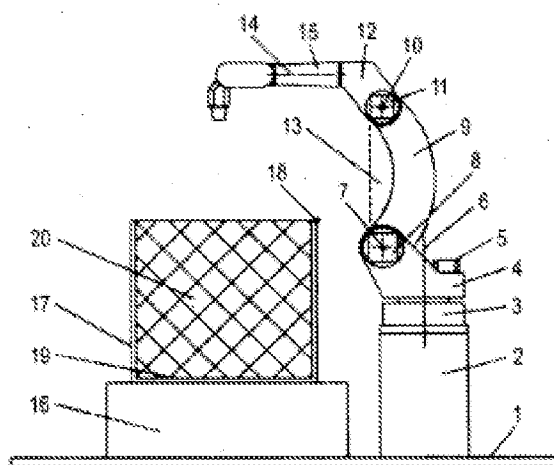
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-4, as best understood, are rejected under 35 U.S.C. 102(b), as best understood, as being anticipated by Huetsch (U.S. Patent 4,685,861).

11. Applicant claims an industrial robotic arm as which is represented by Figure 1 below.

FIG. 1



12. Huetsch teaches a robotic arm as shown below.

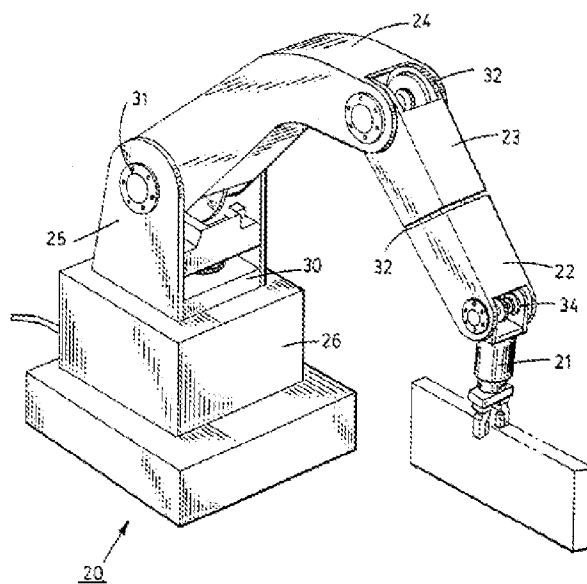


FIG. 1

13. Regarding claim 1, the table below shows the relationship between applicant's claimed invention and Huetsch.

Claimed Limitations	Applicant's Ref. #	Huetsch's Ref. #
a base	3	26
a swing part	4	25
a first ("curved") arm	9	24
a second arm	12	23

The applicant further claims that the first arm has a continuous-curved C shape, wherein the thickness of said C-shaped first arm decreases continuously from the swing part to a second arm drive part.

As seen in the figure above, Huetsch teaches the first arm (fig.1, 24) having a continuously-curved C shape since it has a continuously-curved C shape portion (there is a c-shaped portion at the bend in the arm 24. There are two, in fact, one on the inner part of the arm 24, and another on the outer part of the arm 24). In addition the arm decreases continuously in thickness from the swing part (fig.1, 25) to a second arm drive part (fig.1, 32).

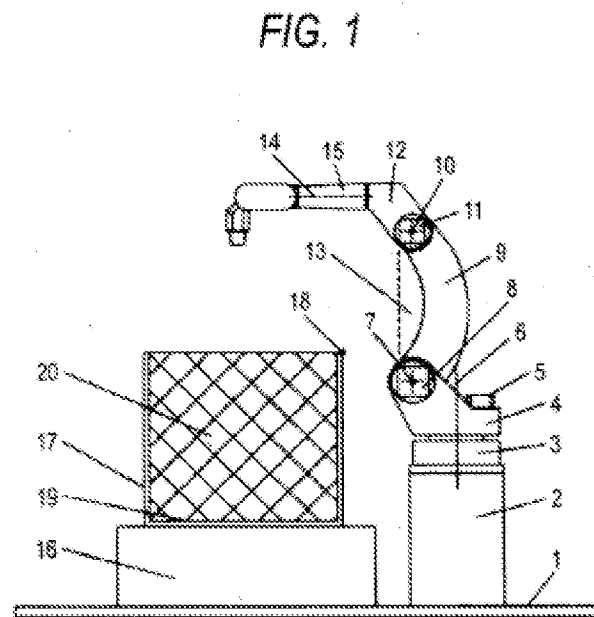
14. Regarding claim 2, the arm of the robot is curved in the direction claimed.

15. Regarding claims 3 and 4, applicant further claims that the center of gravity of the first arm is offset from the line connecting the rotating axes 8 and 10 due to said first arm having curvature as depicted in applicant's figure. Since the shape of the prior art structure is substantially the same as the applicant's embodiment shown by Figure 1, the center of gravity will be inherently offset as claimed.

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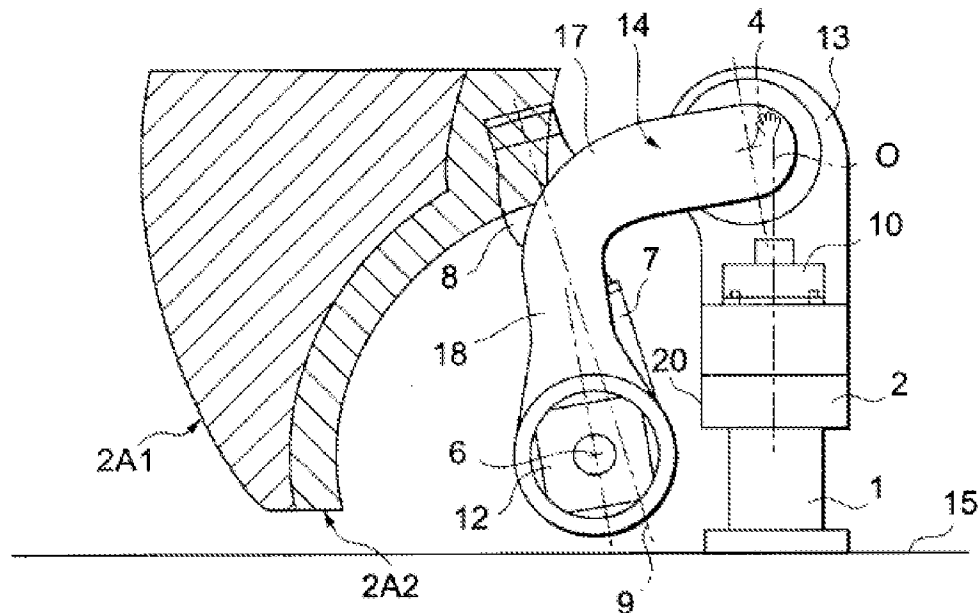
16. Claims 1-4 are rejected under 35 U.S.C. 102(b), as best understood, as being anticipated by Murata et al. (U.S. Patent 6,178,842 B1).

17. Applicant claims an industrial robotic arm which is represented by Figure 1 shown below.



18. Murata et al. teach a robotic arm as shown below in Figure 2.

Fig.2



Claimed Limitations	Applicant's Ref #	Murata et al.'s Ref #
a base	3	2
a swing part	4	13
a first ("curved") arm	9	14
a second arm	12	7

The applicant further claims that the first arm has a continuous-curved C shape, wherein the thickness of said C-shaped first arm decreases continuously from the swing part to a second arm drive part.

As seen in the figure above, Murata et al. teaches the first arm (fig.2, 14) has a continuously-curved C shape since it has a continuously-curved portion (fig.2, 17). Furthermore, a thickness of the first arm decreases continuously from one end connected to a second arm drive part (fig.2, 12) to the swing part (fig.2, 13).

19. Regarding claim 2, the arm of the robot is curved in the direction claimed.
20. Regarding claims 3 and 4, applicant claims that the center of gravity of said first arm is offset from the line connecting the rotating axes 8 and 10 due to said first arm having curvature depicted in applicant's figure. Murata et al. teach a first curved arm. Since the shape of the prior art structure is substantially the same as the applicant's embodiment shown by the Figure 1, the center of gravity will be inherently offset as claimed.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

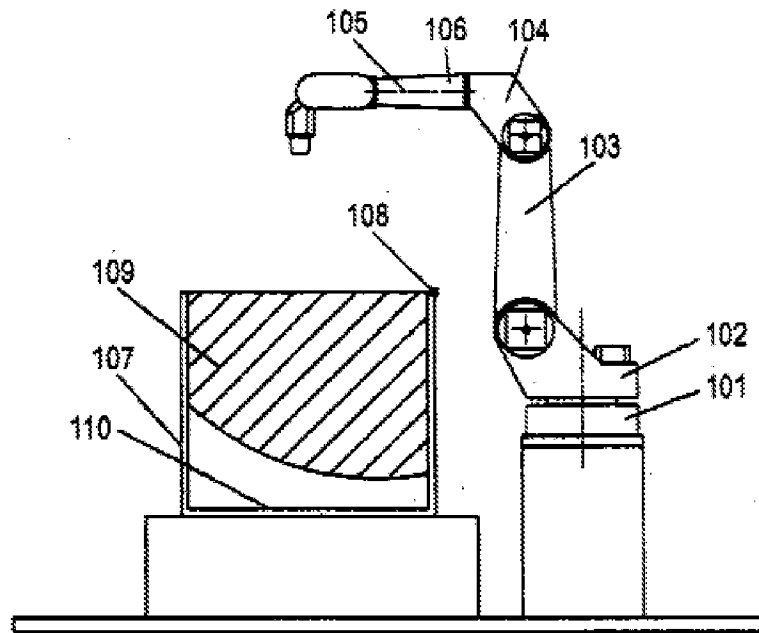
22. Claims 1-4 are rejected under 35 U.S.C. 103(a), as best understood, as being unpatentable over applicants admitted prior art (APA, fig.2) in view of Nakamura (JP04283083A).

Applicant claims a industrial robotic arm according to figure 1 shown above.

Regarding claim 1, applicant claims a base (fig.1, 3), a swing part (fig.1, 4), a first curved arm having a continuous-curved C shape (fig.1, 9) and a second arm (fig.1, 12), wherein a thickness of the C-shaped first arm decreases continuously from one end to the other end.

The APA teaches a similar industrial robot as seen in the figure below:

FIG. 2



Above figure- APA robot.

The APA does not disclose the arm 103 having a continuous-curved C shape.

Nakamura teaches a robot having an arm which has a continuous-curved C shape (fig.1, 21) for the purpose of preventing interference with conveyance passage and also allows for a reduction in size of the work conveyance passage and reduction in the arm operation range (see abstract provided).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the use of a c-shaped arm, as taught by Nakamura, in the device of the APA in order to provide for an arm that prevents interference with another object or work piece or casing.

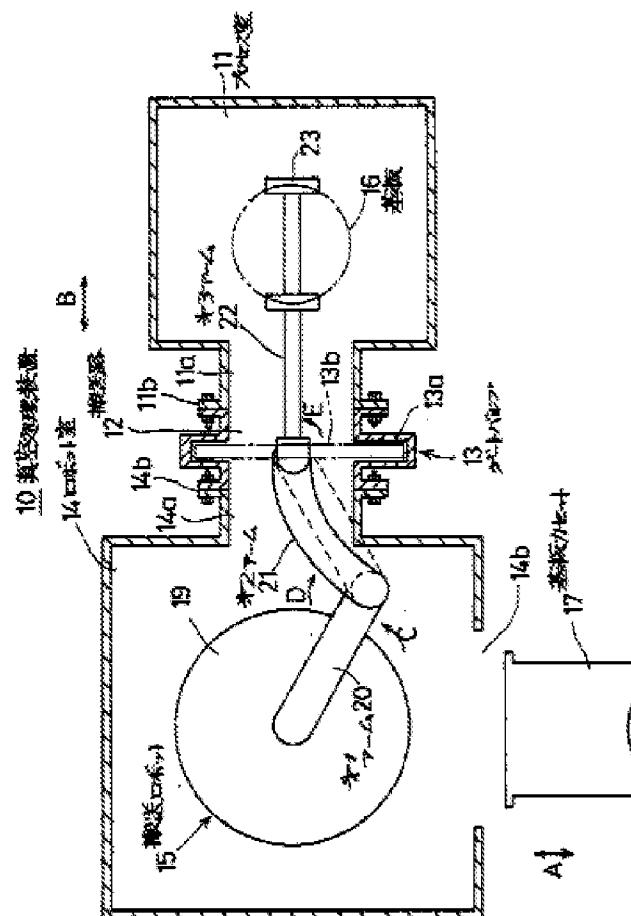
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Examiner notes that although Nakamura does not explicitly disclose a thickness of the arm decreasing from one end to the other end, it would be an obvious modification at the time of the invention to optimize the thickness of the arm in order to maximize the amount of interference prevented.



【図1】

本発明の搬送ロボット及びそれを組み込んだ真空処理装置の一実施例を示す平面図



Above figure- Nakamura's robot.

23. Regarding claim 2, the arm taught by Nakamura is curved in the direction claimed.

24. Regarding claims 3 and 4, applicant further claims that the center of gravity of said first arm is offset from the line connecting the rotating axes 8 and 10 due to said first arm having curvature depicted in applicant's figure. Nakamura teaches a curved arm. Since the shape of the prior art structure is substantially the same as the applicant's embodiment shown by the Figure 1, the center of gravity will be inherently offset as claimed. The combination as set forth by the rejection to claim 1 applies to claims 3 and 4.

Response to Arguments

25. Applicant's arguments filed 06/25/2008 have been fully considered but they are not persuasive. Applicant argues claims 1 and 3 by alleging that the prior art Murata et al. and Huetsch fail to teach a first arm having a continuous-curved C shape. In light of the 112th 1st and 2nd paragraph issues the examiner notes that, as best understood, the arms taught by Murata et al. and Huetsch aren't, when observed as a whole, a continuous-curved C shape, however, they both have a continuous-curved C shape portion. Applicant's amendment to the claims only requires that the first arm have a continuous-curved C shape portion and not that the first arm as a whole be a continuous-curved C shape. Furthermore, applicant alleges Murata et al. and Huetsch fail to teach a thickness of the first arm decreasing from one end to the other end. However, the examiner is unclear as to what thickness the applicant is referring to since

no frame of reference for determining or measuring the thickness has been established. Thus, the examiner is unable to properly treat the limitation with absolute certainty. The examiner does believe that Murata et al. and Huetsch teach a decreasing thickness when looking at a lateral cross-section of the robot arm shown in the figures above.

26. Furthermore, the applicant's arguments with respect to claims 1 and 3 have been considered but are moot in view of the new ground(s) of rejection which are necessitated by amendment. In an alternative interpretation of the claim language the examiner has applied a new grounds of rejection treating the first arm as whole to be a C shape part.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP11010687A is pertinent since it also provides the use of a curved arm to prevent interference with other members.

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Diaz whose telephone number is (571)270-5461. The examiner can normally be reached on Monday-Thursday 7:30am-6:00pm, Friday's off., off first Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571)272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 4174

/Thomas Diaz
Examiner
Art Unit 4171

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/Richard WL Ridley/
Supervisory Patent Examiner, Art Unit 3682